

Claims 1 - 29. (Canceled)

Claim 30. (Currently Amended) A vascular prosthetic comprising:

at least two fixed tissue valvular conduits, each of said conduits having an angular sectioned inflow end and an outflow end and a valve of fixed tissue housed therein;

an inflow conduit having a large diameter cross-sectional area and a smooth inner lumen;

a seam, the seam comprising a plurality of single pass stitches, the seam on the angular sectioned inflow ends to attach the inflow ends to each other to define the inflow conduit, the smooth inner lumen oriented at an angle of less than 30 degrees to each of the at least two valvular conduit outflow ends, the inflow conduit positioned upstream of each of said valves.

Claim 31. (Previously Presented) The vascular prosthetic of claim 30 wherein the inflow conduit is suitable for attachment to a heart to receive blood from the right ventricle.

Claim 32. (Previously Presented) The vascular prosthetic of claim 30 wherein-at least one outflow end is suitable for attachment to a pulmonary trunk.

Claim 33. (Previously Presented) The vascular prosthetic of claim 30 wherein the outflow ends are suitable for attachment to first and second pulmonary arteries.

Claim 34. (Previously Presented) The vascular prosthetic of claim 30 wherein the valve of each valvular conduit opens at pressures as low as about 1mm Hg and remains sealably closed so as to withstand backflow pressures greater than about 200 mm Hg.

Claim 35. (Previously Presented) The vascular prosthetic of claim 30 wherein the cross-sectional area of the inflow end of the vascular prosthetic is greater than about 22 mm.

Claim 36. (Previously Presented) The vascular prosthetic of claim 30 wherein the cross-sectional area of the inflow end of the prosthetic is greater than about 28 mm.

Claims 37 - 38. (Canceled)

Claim 39. (Withdrawn) The vascular prosthetic of claim 30 wherein each of the valvular conduits is further joined adjacent their outflow ends and downstream of each of the valves to form a single outflow end of the vascular prosthetic.

Claim 40. (Withdrawn) The vascular prosthetic of claim 39 wherein a second seam joins the at least two valvular conduits adjacent their outflow ends and downstream of each of the valves to form the single outflow end of the vascular prosthetic.

Claim 41. (Withdrawn) The vascular prosthetic of claim 39 wherein the single inflow end is suitable for attachment to the right ventricle and the single outflow end is suitable for attachment to a pulmonary trunk.

Claims 42 THROUGH 53. (Canceled)

Claim 54. (Withdrawn) The vascular prosthetic of claim 30 wherein the stitches are applied such that the stitches will not unravel when neighboring stitches are severed.

Claim 55. (Withdrawn) The vascular prosthetic of claim 30 wherein the stitches include discrete stitches.

Claim 56. (Withdrawn) The vascular prosthetic of claim 30 wherein the seam includes a biological sealant.

Claim 57. (Withdrawn) The vascular prosthetic of claim 30 wherein the seam includes a chemical sealant.

Claim 58. (Withdrawn) The vascular prosthetic of claim 30 wherein the seam is formed by laser beam radiation.

Claim 59. (Canceled)

Claim 60. (Previously Presented) The vascular prosthetic of claim 30 wherein the fixed tissue conduits are fixed by an aldehyde.

Claim 61. (Withdrawn) The vascular prosthetic of claim 30 wherein the fixed tissue conduits are fixed by gamma radiation.

Claim 62. (Previously Presented) The vascular prosthetic of claim 30 wherein the fixed tissue conduits are fixed by a polyepoxy compound.

Claim 63. (Currently Amended) A vascular prosthetic comprising:  
a “Y” shaped conduit of fixed biological tissue having a large diameter inflow conduit, a bifurcated outflow conduit comprising two valvular conduit outflow ends and an integral valve disposed in each valvular conduit outflow ends, the pulmonary valved conduit formed from ~~of~~ chemically fixed biological tissue, wherein each of said valvular conduits ends is joined at a seam forming the inflow conduit, the seam including a plurality of stitches forming a smooth inner lumen along the large diameter inflow conduit, the smooth inner lumen in fluid communication across the integral valves with the flow path in the valvular conduit outflow ends at an angle of transition less than ~~then~~ than 15 degrees from said inflow conduit to either of the valvular conduit outflow ends; the large diameter inflow conduit with a cross-sectional area larger than the cross-sectional area of either of the two valvular conduit outflow ends forming the “Y” shape.

Claim 64. (Previously Presented) The vascular prosthetic of claim 63 wherein the single inflow end is suitable for attachment to a heart to receive blood from the right ventricle.

Claim 65. (Previously Presented) The vascular prosthetic of claim 63 wherein the valvular conduits comprise first and second outflow ends, wherein at least one outflow end is suitable for attachment to a pulmonary trunk.

Claim 66. (Previously Presented) The vascular prosthetic of claim 65 wherein the first and second outflow ends are suitable for attachment to first and second pulmonary arteries.

Claim 67. (Previously Presented) The vascular prosthetic of claim 63 wherein the valve of each valvular conduit opens at pressures as low as about 1mm Hg and remains sealably closed so as to withstand backflow pressures greater than about 200 mm Hg.

Claim 68. (Previously Presented) The vascular prosthetic of claim 63 wherein the cross-sectional area of the inflow end of the vascular prosthetic is greater than about 22 mm.

Claim 69. (Previously Presented) The vascular prosthetic of claim 63 wherein the cross-sectional area of the inflow end of the vascular prosthetic is greater than about 28 mm.

Claims 70, 71 and 72. (Canceled)

Claim 73. (Previously Presented) The vascular prosthetic of claim 63 wherein the stitches are formed in a single pass.

Claim 74. (Withdrawn) The vascular prosthetic of claim 72 wherein the stitches are formed in more than one pass.

Claim 75. (Withdrawn) The vascular prosthetic of claim 72 wherein the stitches are applied such that the stitches will not unravel when neighboring stitches are severed.

Claim 76. (Withdrawn) The vascular prosthetic of claim 72 wherein the stitches include discrete stitches.

Claim 77. (Withdrawn) The vascular prosthetic of claim 63 wherein the seam includes a biological sealant.

Claim 78. (Withdrawn) The vascular prosthetic of claim 63 wherein the seam includes a chemical sealant.

Claim 79. (Withdrawn) The vascular prosthetic of claim 63 wherein the seam is formed by laser beam radiation.

Claim 80. (Canceled)

Claim 81. (Currently Amended) The vascular prosthetic of claim ~~70~~ 63 wherein the fixed tissue conduits are fixed by an aldehyde.

Claim 82. (Withdrawn) The vascular prosthetic of claim 70 wherein the fixed tissue conduits are fixed by gamma radiation.

Claim 83. (Withdrawn) The vascular prosthetic of claim 70 wherein the fixed tissue conduits are fixed by a polyepoxy compound.

Claim 84. (Currently Amended) A vascular prosthetic comprising:  
an inflow conduit comprising a manifold formed from the ~~sealed~~ attachment of two donor valved blood vessels, the ~~sealed~~ attachment including a plurality of stitches forming a smooth inner lumen, each of said two blood vessels housing a biological valve integral therewith, ~~said~~ each blood vessels configured to permit the flow of blood therethrough by the valve opening at a relatively low pressure and configured to prevent the backflow of blood therethrough by the valve closing so as to withstand relatively high pressures, said manifold formed at ~~a luminal~~ an angle of transition of the blood flow therethrough that is less than ~~about~~ 30 degrees upstream of ~~each of~~ the biological valves so as not to interfere with the effective operation of the biological valves, the inflow conduit with a cross-sectional area larger than the cross-sectional area of either of the inflow ends of each of the donor blood vessels, and an outflow conduit positioned downstream of each of the biological valves.

Claim 85. (Previously Presented) The vascular prosthetic of claim 84 wherein the inflow conduit is suitable for attachment to a heart to receive blood from the right ventricle.

Claim 86. (Previously Presented) The vascular prosthetic of claim 84 wherein the donor blood vessels comprise first and second outflow ends, wherein at least one outflow end is suitable for attachment to a pulmonary trunk.

Claim 87. (Previously Presented) The vascular prosthetic of claim 86 wherein the first and second outflow ends are suitable for attachment to first and second pulmonary arteries.

Claim 88. (Previously Presented) The vascular prosthetic of claim 84 wherein the valve of each donor blood vessel opens at pressures as low as about 1mm Hg and remains sealably closed so as to withstand backflow pressures greater than about 200 mm Hg.

Claim 89. (Previously Presented) The vascular prosthetic of claim 84 wherein the cross-sectional area of the inflow conduit of the vascular prosthetic is greater than about 22 mm.

Claim 90. (Previously Presented) The vascular prosthetic of claim 84 wherein the cross-sectional area of the inflow conduit of the vascular prosthetic is greater than about 28 mm.

Claim 91. (Previously Presented) The vascular prosthetic of claim 84 wherein the plurality of donor blood vessels are chemically fixed biological tissue.

Claims 92 - 93. (Canceled)

Claim 94. (Previously Presented) The vascular prosthetic of claim 84 wherein the stitches are formed in a single pass.

Claim 95. (Withdrawn) The vascular prosthetic of claim 93 wherein the stitches are formed in more than one pass.

Claim 96. (Withdrawn) The vascular prosthetic of claim 93 wherein the stitches are applied such that the stitches will not unravel when neighboring stitches are severed.

Claim 97. (Withdrawn) The vascular prosthetic of claim 93 wherein the stitches include discrete stitches.

Claim 98. (Withdrawn) The vascular prosthetic of claim 84 wherein the sealed attachment includes a biological sealant.

Claim 99. (Withdrawn) The vascular prosthetic of claim 84 wherein the sealed attachment includes a chemical sealant.

Claim 100. (Withdrawn) The vascular prosthetic of claim 84 wherein the sealed attachment is formed by laser beam radiation.

Claim 101. (Canceled)

Claim 102. (Previously Presented) The vascular prosthetic of claim 91 wherein the plurality of donor blood vessels are fixed by an aldehyde.

Claim 103. (Withdrawn) The vascular prosthetic of claim 91 wherein the plurality of donor blood vessels are fixed by gamma radiation.

Claim 104. (Withdrawn) The vascular prosthetic of claim 91 wherein the plurality of donor blood vessels are fixed by a polyepoxy compound.

Claim 105. (Previously Presented) The prosthetic of claim 84 wherein the plurality of donor blood vessels each comprise a vein segment.

Claim 106. (Previously Presented) The prosthetic of claim 105 wherein the plurality of donor blood vessels each comprise the jugular vein of a donor quadruped or marsupial.

Claim 107. (Previously Presented) The prosthetic of claim 106 wherein the valved blood vessels each comprise the jugular vein of a donor caprine, cervine, canine, ovine, bovine, equine or marsupial.

Claim 108. (Currently Amended) A vascular prosthetic comprising:

two fixed tissue valvular conduits, each of said conduits having an angular sectioned inflow end and an outflow end and a valve of fixed tissue housed therein, each of said conduits comprising the jugular vein of a donor quadruped or marsupial;

wherein each of said conduits is joined at the angular sectioned inflow ends by stitches to form a single inflow end having a smooth inner lumen with a luminal angle of less than about 30 degrees adjacent said inflow ends and upstream of each of said valves to form a single inflow end cross-sectional area larger than the cross-sectional area of any of the inflow ends of said valvular conduits, the joiner providing an angle of transition of the blood flow through the single inflow end and into the outflow ends that is less than 30 degrees.

Claim 109. (Previously Presented) The vascular prosthetic of claim 108 wherein the single inflow end is suitable for attachment to a heart to receive blood from the right ventricle.

Claim 110. (Previously Presented) The vascular prosthetic of claim 108 wherein the valvular conduits comprise first and second outflow ends, wherein at least one outflow end is suitable for attachment to a pulmonary trunk.



Claim 111. (Currently Amended) The vascular prosthetic of claim 108 wherein the valvular conduits comprise first and second outflow ends that are suitable for attachment to first and second pulmonary arteries.

Claim 112. (Previously Presented) The vascular prosthetic of claim 108 wherein the valve of each valvular conduit opens at pressures as low as about 1mm Hg and remains sealably closed so as to withstand backflow pressures greater than about 200 mm Hg.

Claim 113. (Previously Presented) The vascular prosthetic of claim 108 wherein the cross-sectional area of the inflow end of the vascular prosthetic is greater than about 22 mm.

Claim 114. (Previously Presented) The vascular prosthetic of claim 108 wherein the cross-sectional area of the inflow end of the vascular prosthetic is greater than about 28 mm.

Claim 115. (Previously Presented) The vascular prosthetic of claim 108 wherein the fixed tissue conduits are fixed by an aldehyde.

Claim 116. (Withdrawn) The vascular prosthetic of claim 108 wherein the fixed tissue conduits are fixed by gamma radiation.

Claim 117. (Withdrawn) The vascular prosthetic of claim 108 wherein the fixed tissue conduits are fixed by a polyepoxy compound.